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SANDIA NATIONAL LABORATORIES
CHEMICAL & DISPOSAL ROOM PROCESSES DEPARTMENT 6832
WASTE ISOLATION PILOT PLANT PROJECT
TECHNICAL OPERATING PROCEDURE (TOP)

TOP-565

CALIBRATION, USE, AND MAINTENANCE OF THE METTLER MT/UMT2 BALANCE

Revision 1

Approved for Issuance: Steven P. Mellis — SNL QA Reviewer — 10-1-97 — Date

Effective Date: 10-1-97

1.0 PURPOSE

This procedure provides for the calibration, operation, maintenance of the Mettler MT/UMT balances in building 823, rooms 2079 and B45, as part of the laboratory geochemistry research activities in support of the Waste Isolation Pilot Plant (WIPP) Project.

2.0 SCOPE

This procedure is applicable only for the Mettler MT/UMT balances in building 823, rooms 2079 and B45.

This document is not meant to substitute for the manufacturer's instruction manuals for the balances. The user is responsible for reading and understanding the appropriate manuals.

3.0 TECHNICAL, REGULATORY, AND QA PROGRAM REQUIREMENTS

This procedure describes the use of a laboratory balance for various activities that are part of the laboratory geochemistry research activities in support of the Waste Isolation Pilot Plant (WIPP) Project. There are no special related technical or regulatory requirements. The QA program requirements that apply are listed in Sections 6.0 and 9.0.

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4.0 SAFETY

This document does not address ES&H issues. Laboratory ES&H procedures described in the SOPs in which the equipment is used shall be adhered to.

These SOPs are the following: SP472968 - ES&H Standard Operating Procedure, Geochemical Research in the Department 6832, Water-Chemistry Laboratory, Building 823, Room 2079 (U); and SP472799 - ES&H Standard Operating Procedure, Geochemical Research in the Department 6832 Colloid and Sorption Laboratory, Building 823, Room 2079 (U).

5.0 RESPONSIBILITIES

The Principal Investigator (PI), or designee, whose activities warrant the use of this procedure is responsible for implementing the requirements of this procedure.

The Technical Staff, or designee, is responsible for performing the calibrations and measurements following the requirements of this procedure, documenting calibrations, and assuring that the latest revision of this document is followed.

6.0 CONTROLS

Controls are established by written procedures or instructions prepared in accordance with QAP 5-3, PREPARING, REVIEWING, AND APPROVING TECHNICAL OPERATING PROCEDURES (Revision 4, effective date: 9/30/97) of the Sandia National Laboratories WIPP Quality Assurance Program. Procedures are issued in accordance with QAP 6-1, "DOCUMENT CONTROL SYSTEM", revision 2, effective date 9/13/96 (or latest revision) of the Sandia National Laboratories WIPP Quality Assurance Program.

6.1 STANDARDS

Calibration will be verified using commercially obtained weights that are traceable to NIST or other nationally recognized standards. The serial numbers and expiration dates (if any) of the certifications of the weights used shall be recorded in the laboratory notebook.

The weights shall not be used past the expiration date listed on the container by the certifying organization.

6.2 FREQUENCY

The balance will be recalibrated upon failure of a performance test, this calibration will be documented in the balance's scientific notebook.

The instrument's calibration shall be verified with performance tests immediately prior to use.

6.3 PERFORMANCE TEST CRITERIA

Use at least three NIST-traceable weights, two of which bound your expected "unknowns". Record each weight number and associated "indicated" balance reading in the scientific notebook.

Performance tests will be done by weighing the NIST-traceable weights. The maximum acceptable deviation from the nominal values for each weight is 0.0001g.

When using a weight (or combination of weights) not listed above, use the next lowest value as your maximum allowable deviation.

Any one measurement's deviation in excess of the maximum allowable deviation listed for that weight constitutes a failed performance test.

6.4 CORRECTIVE ACTION

Check the balance and work area for interference, correct the problem, if any, and repeat the weighing. If the performance check still fails, recalibrate the balance as per its manual's instructions (see section 6.5) and repeat the performance check. If the instrument still fails, it shall be tagged and taken out of service until repaired.

6.5 CALIBRATION

Calibrations will be performed as per instructions on pages 1-11 of the attached appendix (see Appendix A).

7.0 PROCEDURE

Analyses shall be performed as per instructions on pages 1-11 of the attached appendix (see Appendix A).

When handling weights, always use tweezers. Never touch the weights with your hands. Delicately remove chemicals, dust, and debris from the balance pan before you place the weights on it. Minimize dust accumulation on the weights by keeping them in their container with the lid closed. Be careful to prevent weight-set mix-ups, move only one weight at a time from its box.

Always weigh samples on weighing paper or in an appropriate container. Do not weigh objects heavier than those recommended by the manufacturer. Keep weighing pans/platforms clean of debris and spills.

8.0 MAINTENANCE

Maintenance and routine calibrations will be performed every 6 months by Jay Hagerman of QA Balance Services, Inc., or his equivalent. These calibrations will be performed in accordance with QAP 12-2, "WIPP Calibration Quality Assurance Program", latest revision.

9.0 QA RECORDS

Calibrations and performance test results will be recorded in the laboratory notebook in accordance with Sandia National Laboratories WIPP Quality Assurance Program Procedure (QAP) 20-2, "PREPARING, REVIEWING, AND APPROVING SCIENTIFIC NOTEBOOKS", revision 2, effective date 7/31/97 (or latest revision). The laboratory notebook will be submitted to the Sandia WIPP Central File in accordance with QAP 17-1, "WIPP QUALITY ASSURANCE RECORDS SOURCE REQUIREMENTS", revision 2, effective date 9/12/96 (or latest revision).

10.0 REFERENCES

Mettler-Toledo AG, 1991. *Mettler MT/UMT Balances Operating Instructions Manual*, Mettler-Toledo AG, Greifensee, Switzerland

QAP 5.3, PREPARING, REVIEWING, AND APPROVING TECHNICAL OPERATING PROCEDURES (Revision 4, effective date: 9/30/97)

QAP 6-1, "DOCUMENT CONTROL SYSTEM", revision 2, effective date 9/13/96 (or latest revision)

QAP 12-2, "WIPP Calibration Quality Assurance Program", revision 0, effective date 7/24/96 (or latest revision.)

QAP 17-1, "WIPP QUALITY ASSURANCE RECORDS SOURCE REQUIREMENTS", revision 2, effective date 9/12/96 (or latest revision).

QAP 20-2, "PREPARING, REVIEWING, AND APPROVING SCIENTIFIC NOTEBOOKS", revision 2, effective date 7/31/97 (or latest revision).

SP472968 - ES&H Standard Operating Procedure, Geochemical Research in the Department 6832, Water-Chemistry Laboratory, Building 823, Room 2079 (U)

SP472799 - ES&H Standard Operating Procedure, Geochemical Research in the Department 6832 Colloid and Sorption Laboratory, Building 823, Room 2079 (U).

11.0 FORMS

There are no forms associated with this procedure.

12.0 APPENDICES

Appendix A: Mettler MT/UMT Operator's Instruction Manual

APPENDIX A: METTLER MT/UMT OPERATOR'S INSTRUCTION MANUAL

1.2 Preparing your balance

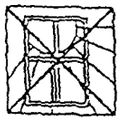
If you fold out the front fold-out, you have in front of you an immediate overview of all general illustrations at a glance.

You need undertake the following operations only on first-time installation and each time you change the balance location.

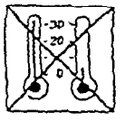
Select a suitable location

Your balance expresses its thanks for an optimum location by providing you with excellent weighing results:

- Firm, vibration-free location, as level as possible



- No direct sunlight



- No extreme temperature fluctuations

- No extreme fluctuations in the atmospheric humidity

- No excessive drafts (e.g. due to powerful air conditioning units)

Additional tips and information regarding an optimum location can be found in the METTLER brochure -"Weighing the right way", which is enclosed with your balance.

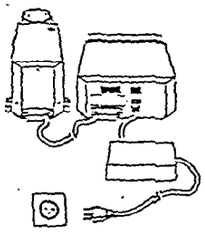
Unpack your balance

Your balance is dispatched to you in a rugged packaging that you should store in a safe place for possible future transport of the balance.

As soon as you have decided on a suitable location, remove all components of your new balance from the packaging.

Set up the balance

You can set up the weighing cell to the left or right of the evaluation unit. The flexible arrangement of the balance allows optimum adaptation to your method of working and to the available space.

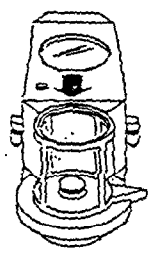


Connect the evaluation unit and the weighing cell

- Plug the supplied connection cable into connection socket ⑦ of the evaluation unit (marked with „For connection to weighing cell only") and plug the other end into connection socket ⑲ of the weighing cell (marked with „For connection to evaluation unit only"). It is immaterial which end of the cable you connect to the evaluation unit or the weighing cell.

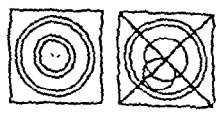
- The screws of the cable connectors have holes and can be sealed to prevent inadvertent separation of weighing cell and evaluation unit.

APPENDIX A: METTLER MT/UMT OPERATOR'S INSTRUCTION MANUAL



Mount the weighing pan and the draft shield

- The MT balances are supplied with mounted weighing pan. You thus only need to mount the glass cover on draft shield ⑫ of the weighing cell.
- The UMT balances have a smaller weighing pan thant the MT balances (to avoid cornerload errors). The weighing pan is already mounted, on delivery. You thus need only mount the glass cover on the draft shield ⑫ of the weighing cell.
  In addition, the UMT balances have an additional draft shield as standard, which is available as an optional accessory for the MT balances: Mount the additional draft shield in accordance with the enclosed mounting instructions.

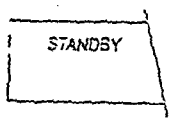


Level your balance

- Turn the two screw feet ⑱ at the rear of the weighing cell housing until the air bubble is in the middle of level ⑯.

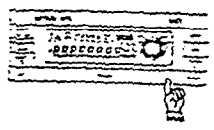
Connect your balance to the power supply

- Connect the AC adapter supplied to connection socket ⑤ at the rear of the evaluation unit and then to the power supply.
- The AC adapter can either be placed on the bench or, to save space, mounted on the wall. The AC adapter holder and the installation set with dowels and screws are used for this.



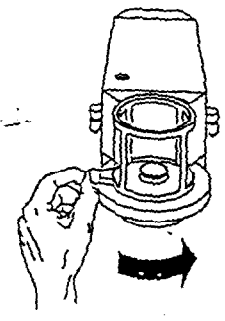
After connection, your balance is on standby. If your balance is already acclimatized (depending on the temperature difference between the old and new location, this takes 6 to 12 hours), it provides you with the first reliable results after 60 minutes warm-up time. After approximately 2 hours you can count on very accurate weighing results.

1.3 Weighing made simple



- By pressing the «On/Off» key you switch your balance from standby to the weighing mode. The balance now automatically performs a brief self-test and all display segments light up briefly.

  At the end of the self-test, the balance determines the zero point. This very precise measurement takes several seconds, depending on the stability and acclimatization of the balance.



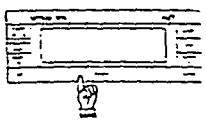
- If the draft shield is open, you can close it by pressing one of the two keys ⑥ or ⑨ or manually by turning door handle ⑭.

APPENDIX A: METTLER MT/UMT OPERATOR'S INSTRUCTION MANUAL

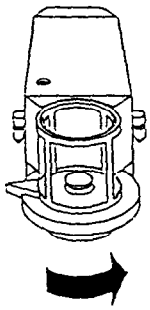
Your balance is fitted with a fully automatic door function, which ensures that the draft shield is always open or closed at the right time.

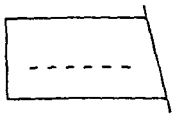
Set your balance to zero (taring):

- If you wish to tare a container, place it on the balance.

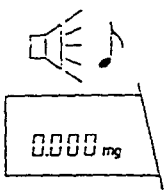


- Press the «Re-Zero» key. The fully automatic door function closes the draft shield.

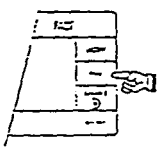




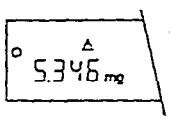
Zeroing of the display (taring) is automatic. While the zeroing is in progress and the horizontal segments appear in the display, you can abort the process by briefly pressing the «Re-Zero» key again.



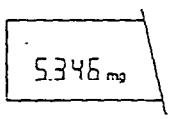
As soon as a beep is heard, zeroing of the balance is complete and the fully automatic door function opens the draft shield.



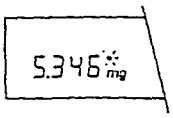
- Load the weighing sample and press the «Print» key. The fully automatic door function closes the draft shield.



The triangle symbol (print symbol) and the circle symbol of the stability detection (ASD) appear in the display.

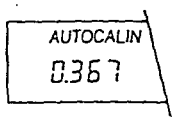


- When the symbol of the stability detection (ASD) fades, a beep sounds; the triangle symbol also fades and the draft shield opens automatically.



- Read off the weighing result. The result remains "frozen" on the display for 5 seconds. This can be recognized by the flashing circle above the weight unit. If the balance is attached to a printer, the weighing result is automatically printed out.

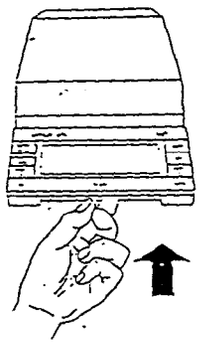
With this automatic door function, your work steps in weighing are reduced from 9 to 5!



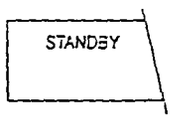
During a weighing, a beep may be heard and the symbol "*AUTOCALIN*" shown in the display. Your balance uses this to show that it would like to calibrate itself. But there is no need for you to interrupt your work as the balance waits until you have not carried out any weighings for a period of about 5 minutes and then performs the fully automatic self-calibration (FACT = Fully Automatic Calibration Technology).

APPENDIX A: METTLER MT/UMT OPERATOR'S INSTRUCTION MANUAL

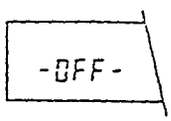
The symbol remains lit up until the balance has calibrated itself or until you trigger the calibration by a keystroke. Section 5.4 shows you how to trigger the calibration yourself.



- For switching off the balance, lift up the «On/Off» key briefly from below. This closes the draft shield automatically if the fully automatic door function is switched on. Otherwise, close the draft shield manually to prevent the ingress of dust and dirt.



After being switched off, the balance is on standby. When it is switched on again, it needs no warm-up time and is in immediate operational readiness.



After an unexpected power outage, however, or if you did not switch off your balance before disconnecting it from the power supply, when power is restored again "*–OFF–*" appears in the display. When the «On/Off» key is now pressed in such a case, an extended, internal self-test is first performed. Here the model designation and the software version are briefly displayed and all display segments light up for a short space of time.

Some additional tips:

- If you have made a mistake during weighing, there is no need to worry: Simply switch off your balance briefly and then switch it on again. You will later learn of other possibilities to bring your MT/UMT to weighing readiness again.

- You can also effect the zeroing (taring) of the balance using the foot or hand switch (available as an accessory) attached to the balance via connection ③. Operation with the foot switch leaves both your hands free for loading the balance.

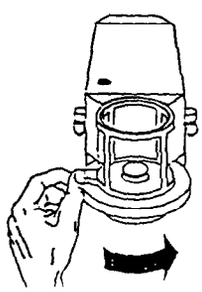
- If you ever have to disconnect your balance from the power supply, first switch it off by lifting up the «On/Off» key. After the balance has been reconnected, it is in the standby mode and "*STANDBY*" appears in the display.

2 Your balance offers high-level operating convenience

2.1 An ergonomic glass draft shield

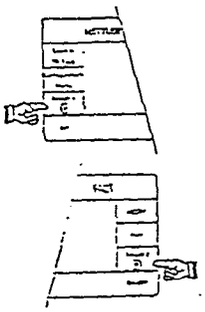
The small, circular glass draft shield reduces the contact surface for disturbing thermal influences and thanks to the narrow framework allows an unrestricted view of the weighing sample.

The weighing chamber can be opened at the left or right. The balance is thus equally convenient to load for left- and right-handers.



You can operate the draft shield manually in the traditional manner using door handle ⑭.

APPENDIX A: METTLER MT/UMT OPERATOR'S INSTRUCTION MANUAL



The semiautomatic operation can be effected either with the ⓒ or ⓓ key. In this case, the draft shield is opened and closed by the motor either to the right or left.

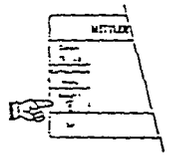
- In one-handed operation, you use one hand to press the ⓒ or ⓓ key and then load the balance using the same hand.

- In two-handed operation, you press the ⓒ or ⓓ key with one hand and load the balance using the other hand.

In certain applications, such as zeroing (taring) of the balance, the draft shield opens and closes fully automatically as you already know from your first weighing. Manual or semiautomatic operation is also possible when the fully automatic door function is operative.

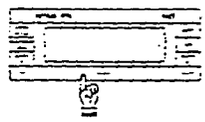
The fully automatic door function primarily facilitates work with the single or twin foot switch (see brochure "METTLER AT/MT/UMT balances - Technical specifications and accessories").

The draft shield of your balance has a "Learn function". If the fully automatic door function is in operation, the draft shield opens automatically when the balance is zeroed and when the weighing result is printed out on the side you desire. For this purpose, the balance notes which of the keys ⓒ or ⓓ you last pressed to open or close the draft shield.

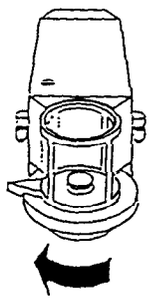


An example:

You used the ⓒ key, which opens the draft shield to the right, for the last door opening.



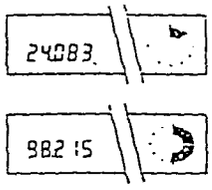
You now wish to zero the balance and press the «Re-Zero» key for this.



The draft shield is closed automatically and when zeroing is complete opens again to the right. However, if you wish the draft shield to open to the left, you must press the ⓓ key before triggering zeroing.

The UMT balances have an additional draft shield as standard; it is available as an optional accessory for the MT balances.

2.2 The METTLER DeltaTrac - an informative display



The METTLER DeltaTrac ㉒ is a supplement to the digital display ㉓. It provides you with a pictorial representation of the weighing range in use and that still remaining. The dynamics of a weighing process can be followed on the METTLER DeltaTrac extremely well. Simply observe the METTLER DeltaTrac during a weighing and you will immediately understand its function.

The METTLER DeltaTrac gives you a new feel for weighing, even with special applications, for example in repeated weighing in to a specified target value and in percent weighings.

APPENDIX A: METTLER MT/UMT OPERATOR'S INSTRUCTION MANUAL

2.3 How you can weigh in the coarse and fine range

Your balance is equipped with a switch key which you can use to switch from the ten times more accurate fine range to the coarse range.

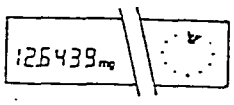
This switching allows you to work in the range best suited to your needs.

If, for example, instead of a high resolution you need a stable weighing result as rapidly as possible, you switch from the fine range to the course range using the switch key. This makes your balance very fast and the weighing results are extremely stable.

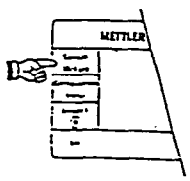
You have the following selectable ranges available:

Balance	Fine range	Coarse range	Key
MT5	1 µg	0.01 mg	10 / 1 µg
UMT2	0.1 µg	1 µg	1 / 0.1 µg

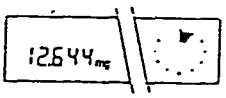
With the «10/1 µg» key of the MT balance or the «1/0.1 µg» key of the UMT balance, you can switch between the fine range and the coarse range:



- The balance is measuring in the fine range



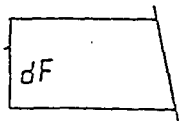
- Press the «10/1 µg» (or «1/0.1 µg») key and...



- ...the balance operates in the coarse range.

By pressing the «10/1 µg» (or «1/0.1 µg») key again, you can return to the fine range.

APPENDIX A: METTLER MT/UMT OPERATOR'S INSTRUCTION MANUAL



Readability (selection of the readout increments) in the fine range

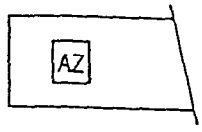
Here you define the readout increments (digits) for the last decimal place for weighings in the fine range. Readout increments of 1, 2, 5 and 10 are available, and these are symbolized by the following setting options:

MT5	UMT2
1 µg*	0.1 µg*
2 µg	0.2 µg
5 µg	0.5 µg
10 µg	1 µg

* = factory setting

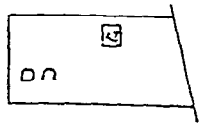
Select readout increments as large as your application allows; the larger the readout increments, the faster the operation of your balance.

With the «10/1 µg» (or «1/0.1 µg with the UMT) key, you toggle between the coarse and fine range.

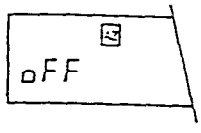


Autozero (AZ)

In this parameter you switch the au matic zeroing (autozero) on or off. When switched on, the zero is auto matically corrected for drift or conta nation of the weighing pan.



- Autozero on*



- Autozero off

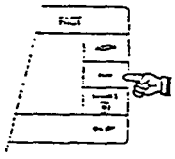
* = factory setting

For particular applications (e.g. moni toring of the zero point in long-term weighings), it can be an advantage t switch the autozero function off.

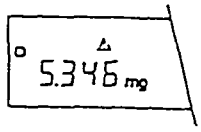
APPENDIX A: METTLER MT/UMT OPERATOR'S INSTRUCTION MANUAL

How to print out the weighing result

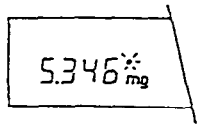
You can output the weighing result via the interface connection ⑤ on a printer. If you wish to attach a third-party printer, you match the parameters of the data interface to the specifications in the printer handbook



- In the weighing mode press the «Print» key briefly.



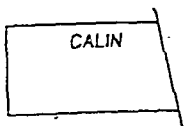
- As soon as the result is stable, it transferred via the interface conn tion ⑤ to the printer. Up to the tra mission, the triangle symbol is lit in the display. If the transmission has not yet taken place, you can abort the procedure by pressing t «Print» key again briefly.



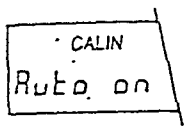
After the transmission, the result i kept for about 5 seconds in the dis play for checking purposes, and a ring symbol flashes at the upper right.

APPENDIX A: METTLER MT/UMT OPERATOR'S INSTRUCTION MANUAL

Calibration and linearization

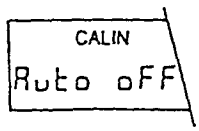


In this parameter you define the calibration mode, i.e. the way in which your balance should be calibrated and linearized. The following possibilities are available:

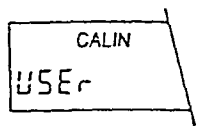


- The balance calibrates itself fully automatically with the internal calibration weights as soon as a change in the operating conditions makes this necessary. There is thus no need to concern yourself with the calibration. The subsequent linearization of the measuring range is also fully automatic. *

  In this mode (fully automatic self-calibration), you can also trigger the automatic calibration at any time by a keystroke. This is practical, for instance, when your balance reports during a weighing that it wishes to calibrate itself. Section 5.4 shows you how to proceed in such a case.



- The above-mentioned, fully automatic self-calibration is switched off. You can trigger the calibration with the internal calibration weights at a keystroke. After initiation, the calibration runs automatically, and at the same time the measuring range is linearized. Section 5.4 shows you how to proceed in this case.

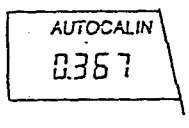


- You use your own, external calibration weight for the calibration. The procedure is described in Section 5.4 of these operating instructions. With this setting, the automatic calibration with the built-in calibration weights is switched off.

* = factory setting

5.4 How to trigger the calibration manually

The balance is set in the factory to fully automatic self-calibration. In this case the balance calibrates and linearizes itself as soon as a change in the local conditions makes this necessary. You thus need not concern yourself with the calibration. But you also have the possibility to trigger the motorized calibration with the internal calibration weights at all times at a keystroke. This can be practical when a beep sounds during a weighing and the adjacent symbol appears in the display. This is how your balance shows you that it would like to calibrate itself. You can now either interrupt your work at the next convenient opportunity for about 5 minutes, when the balance will calibrate itself, or you yourself can trigger the motorized calibration by pressing a key.



You select the calibration mode in sector 2 (*SCALE*) of the configuration register In addition to the fully automatic self-calibration, you have two further calibration possibilities available:

- You trigger the automatic calibration with the internal calibration weights, with simultaneous automatic linearization of the measuring range at a keystroke.

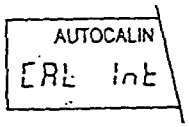
- The manual calibration with an external calibration weight, without linearization of the measuring range.

If you have switched off the automatic self-calibration, you should calibrate the balance occasionally.

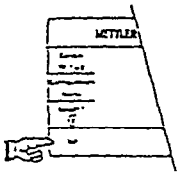
APPENDIX A: METTLER MT/UMT OPERATOR'S INSTRUCTION MANUAL

Automatic calibration with the internal calibration weights at a keystroke

You have this calibration mode available if you have set the parameter "calibration and linearization" in sector 2 of the configuration register (basic settings) either to *CALIN Auto on* or *CALIN Auto oFF*.

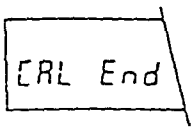


- Repeatedly press the «Menu» key briefly until the adjacent display appears.

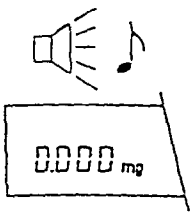


- Trigger the calibration procedure by pressing the «Set» key. The draft shield now closes automatically if the automatic door function is switched on. If not, close the draft shield manually or by pressing the ⓒ or ⓓ key.

- You can follow the calibration a linearization procedure in the numerical display and on the METTLER DeltaTrac, and you a hear when the internal weights a loaded.



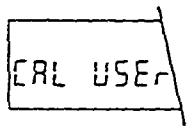
Completion of the calibration and linearization process is displayed briefly,...



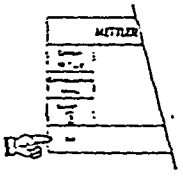
...the beep sounds and the balance returns to the weighing mode.

Manual calibration with an external calibration weight

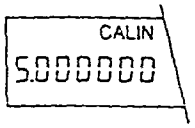
You wish to use your own external calibration weight for the calibration and have set the parameter "calibration and linearization" in sector 2 of the configuration register (basic settings) to *CAL USEr*. In this mode, the automatic calibration with the built-in calibration weights is switched off.



- Repeatedly press the «Menu» key briefly until the adjacent display appears.



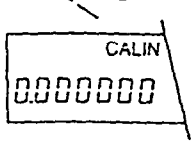
- Trigger the calibration procedure by pressing the «Set» key. The draft shield now closes automatically if the automatic door function is switched on. If not, close the draft shield manually or by pressing the ⓒ or ⓓ key.



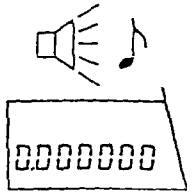
After a short time a beep sounds and the requested, model-dependent calibration weight appears in the display (for example, 5 g in the MT5 case).

- Open the draft shield, load the requested calibration weight and close the draft shield.

- Wait until a beep sounds. The display now requests the removal of the calibration weight.



- Open the draft shield, remove the calibration weight and close the draft shield.

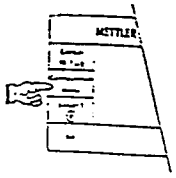


As soon as a beep is heard and the adjacent display appears, the calibration is finished and your balance is again in the weighing mode.

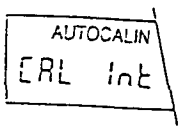
APPENDIX A: METTLER MT/UMT OPERATOR'S INSTRUCTION MANUAL

5.5 How to check whether the balance is still calibrated correctly

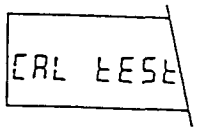
The balance is set to fully automatic self-calibration in the factory. A check of the calibration is not necessary in this mode. If you have selected the automatic calibration mode with manual triggering (*CALIN Auto oFF*) in sector 2 of the configuration register ., it is advisable to check the calibration with the internal calibration weights occasionally.



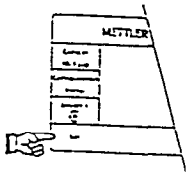
- Select the menu by pressing the «Menu» key briefly.



- Repeatedly press the «Menu» key briefly until the adjacent display appears.

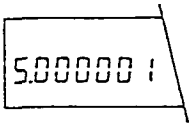


- Select the calibration test by pre ing the «Select 1» key.

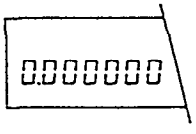


- Start the test by pressing the «S key. If the fully automatic door fu tion is switched on, the draft shie now closes automatically. If not, first close the draft shield manua or by pressing the ⓒ or ⓞ key anc then the «Set» key.

Note:
This display does not appear if y have set the parameter "calibrat and linearization" to *CAL USEr* the configuration register (calibr tion with your own external calib tion weight). Please also see the note at the end of this section.



The internal weights are now loaded, without the balance being calibrated, and the current, model-dependent calibration value displayed, interrupted by the display *tESt*.



- When you have read off the value, abort the test by pressing the «Set» or «Cancel» key. The balance is then again in the weighing mode.

Notes:
If the deviation of the calibration weight is more than ±0.00015% (1.5 ppm) from the full load, the balance should be calibrated (see Section 5.4).

If you work with your own, external calibration weights (parameter "calibration and linearization" set to *CAL USEr* in the configuration register), you can check the calibration of the balance by loading your own, external calibration weights.